

FIELD SUMMARY REPORT

1. INTRODUCTION

This field trip was used as collaborative data in the mapping effort concerning USGS 1:250,000 area of Belleville and Paducah except for the south-east quarter of Paducah.

A. Personnel

George Eliason (Martel Laboratories, Inc.)
Mike Czerwinski (Martel Laboratories, Inc.)
Dawn Alano (Martel Laboratories, Inc.)
David Sumpter (Martel Laboratories, Inc.)
Janice Stone (USFWS)
Nick Rowse (USFWS)
Ron Erickson (USFWS)*
Marvin Hubbell (Illinois Dept. of Conservation)*
Bruce Stebbings (USFWS)*

*Only present 5/23 and 5/24/85.

B. Field Trip Date: 5/20/85 to 5/31/85

C. Photography

Type: CIR

4-14-82	3.0
4-23-82	26.8
3-25-83	-
11-21-83	14.7
11-24-83	3.6
11-25-83	9.1
4-6-84	5.4

*On 11-11-81 there were two flights.

D. Collateral Data

1. USGS quadrangles.
2. Soil surveys for the counties of Pulaski, Alexander, Jackson, Saline, Williamson, Pope, Hardin, Massac, St. Clair, Bond, Gallatin, Montgomery, Edwards, and Richland, Illinois, Calloway and Marshall, Kentucky.
3. Roger Haynes (U.S. Army Corps of Engineers: Carlyle Lake)

4. Charles O'Connell (Dept. of Land and Water, Texas)
5. Mark Spinnel (Field Biologist, Shawnee National Forest)
6. Bailey, Robert G., Description of the Ecoregions of the United States, U.S. Dept. of Agriculture, Miscellaneous Pub. 1980.

II. Overview

There are three ecoregions present within the work area (see index map). Area 1, Bailey's Ecoregion defines as Prairie Parkland Province. This province covers an area from Illinois to the gulf coast over which prairie and deciduous growth alternate. Topographically, the area is mainly rolling plains with steep bluffs bordering many of the valleys. Average annual precipitation is between 23 and 40 inches. Woodland vegetation is forest-steppe with flood plains containing elm, sycamore, oak, cotton wood and ash.

Area 2, Bailey defines as Eastern deciduous Forest Province. This area is primarily composed of rolling hills and was once inundated by glaciers. Annual average precipitation is between 35 and 60 inches. The area is dominated by tall broadleaf deciduous trees which provide a dense canopy in summer. In poorly drained habitats, dominant species are willow, ash, elm.

Area 3, Bailey defines as the Outer Coastal Plain Forest Province. This area ranges from the southern gulf coastal plains up along the Mississippi River. The stream and river environment is characterized by marshes, swamps. Average annual precipitation is between 40 and 60 inches. Cypress and willow are dominant in the swamps. Other species in poorly drained areas include maple, oak, elm, ash, and hickory.

III. Biological Characteristics of Wetlands

- A. Marine: Not present
- B. Estuarine: Not present
- C. Lacustrine: Several lakes are present, some natural and some the result of impoundments or excavations. Four major reservoirs are present: Rend Lake, Carlyle Lake, Crab Orchard Lake, and Horseshoe Lake.

Rend Lake has been dammed resulting in large areas of dead trees in the northern portion of the lake.

Carlyle Lake and Crab Orchard are also the result of impoundments. There are some sandy areas along northern Carlyle Lake which were checked while in the field, and it was determined that these areas were intermittently flooded. For the purposes of consistency, all areas along the major reservoirs with this signature will be labelled as such (L2USJh). The 'J' regime was selected because of the minimal fluctuation and the high slope of these shorelines.

Horseshoe Lake is an oxbow lake formed by the Mississippi River.

Pond Lily (Nuphar sp.) is a vascular rooted aquatic plant which was present in several lakes. Nuphar will be classified as a non-persistent emergent. Duckweed (Lemna sp.), Arrowhead (Sagittaria sp.), and Arrow Arum (Peltandra virginica) were also common lake species and will be classified as vascular floating, persistent emergent and persistent emergent respectively. All permanent open water lakes will be classified as L1UBH or L1UBHh when appropriate. The impoundment modifier (h) will be used on all wetlands back to the mean pool elevation level of the body of water impounded.

- D. Riverine: The major rivers in the area include the Mississippi, the Ohio, Little Wabash, Kaskaskia, Big Muddy, Cache, and the Saline River. All will be classified as permanently flooded lower perennial riverine (R2UBH). There has been extensive channeling along the Little Wabash. No upper perennial rivers were encountered. Those streams which are intermittent on the topographic map and unvegetated, will be classified as semi-permanently flooded streambeds (R4SBF). Ditches will not be delineated unless the absence disrupts the continuity of the hydrology. Riverine flats will be classified as temporarily flooded lower perennial riverine (R2USA), and temporarily flooded streambeds (R4SBA), when used in conjunction with an intermittent river. There are some bedrock areas in the hills in Missouri which will be classified as permanently flooded lower perennial bedrock rivers (R2RB1H).
- E. Palustrine: Forested areas which were identified as wetlands are semi-permanently, seasonally, or temporarily flooded.

Good indicator species for semi-permanently flooded forests are bald cypress (Taxodium distichum), tupelo (Nyssa sp.), and willow (Salix sp.). It should be noted that the northern extent of naturally growing cypress is the southern portion of Illinois and none were encountered in the Belleville quadrangles.

Semi-permanent wet areas are usually associated with lakes or river floodplains.

Most riverine floodplains are forested, or farmed non-wetland. These forested areas will be classified as either seasonally or temporarily wet. Common species found in both temporarily and seasonally flooded areas are silver maple (Acer saccharinum), willow (Salix sp.), river birch (Betula nigra), eastern cottonwood (Populus deltoides), red maple (Acer rubrum), sweetgum (Lyquidambar styraciflua), hackberry (Celtis sp.), locust (Gleditsia sp.) slippery and American elm (Ulmus sp.) box elder (Acer negundo), sycamore (Platanus occidentalis), ash (Fraxinus sp.), and pin, white, bur and water chestnut oak (Quercus sp.).

There are three good indicator species for a seasonally flooded forested wetland. They are silver maple, river birch and willow. If these species are dominant and the area is not semi-permanent, the area is classified as seasonally flooded. Other factors that are helpful in determining seasonal/temporary breaks are: (1) soil surveys when available, (2) standing water; often present in seasonal areas, and (3) understory. Temporarily flooded areas usually have a lot of shrubs and poison ivy growing as understory. There is generally a well established community of plants that are not indicative of a seasonally flooded area. The seasonally flooded forested species are not indicative wet species, one common example being sweetflag (Acourus calamis).

Northern Carlyle Lake and the Oakwood Bottoms in Shawnee National Forest are both artificially flooded for purposes of wildlife habitat enrichment and water fowl management. The "K" water regime will be used here. Carlyle Lake is flooded in the spring and gravity drained (Roger Haynes: USACE). The oakwood bottoms are flooded for 3 months in the fall and gravity drained (Mark Spinell, Shawnee National Forest).

The shrub-scrub classification is represented in the semipermanent, seasonal and temporarily flooded water regimes.

Good indicator species of semipermanently flooded shrub areas are button bush (Cephalanthus occidentalis) and willow. Willow is more the dominant species in shrub-scrub areas classified as seasonal with some button bush and dogwood (Cornus sp.). In an area that is temporarily flooded shrub-scrub, usually a mixture of hydrophytic tree seedlings are the dominant growth.

Palustrine emergents were encountered in semipermanent, seasonal and temporary water regimes. Common semipermanent and seasonal species are common cattail (*Typha latifolia*), Reed Canary Grass (*Phragmites* sp.), sedges (*Carex* sp.), bulrushes (*Scirpus* sp.), rushes (*Juncus* sp.), sweetflag (*Acorus* sp.) arrow arum (*Peltandra* sp.) and some loosestrife (*Decadon* sp.).

In the temporarily flooded areas, there were a lot of unidentified grasses. Common to all wet emergent areas are smartweed (*Polygonum* sp.), spikerush (*Eleocharis* sp.), dock (*Rumex* sp.), and cut grass (*Leersia* sp.). Pond lily (*Nuphar* sp.) was the only non-persistent emergent encountered.

The farmed modifier will be used in seasonally or temporarily flooded basins that hold water during the early spring but are dry enough to plant crops by late spring. A basin, as used in this case, is a pothole depression or floodplain meander scar.

The partially drained modifier is used in areas where the basin is being drained by an excavated ditch.

One area identified as a seep was encountered in the rolling hills of Missouri, and areas which bear this same signature will be classified as saturated emergent wetland (PEMS).

Both floating and rooted aquatic beds were present. Duckweed (*Lemna* sp.) was a common floating aquatic and water lily (*Nymphaea* sp.). pondweed (*Potamogeton* sp.) and creeping willow primro
rooted vascular plants.

Farm ponds were either the result of an impoundment or an excavation, and all carry the appropriate modifier.

IV. IMAGERY

- The photography covering the work area was taken on nine different dates, either in the spring or fall, between 1981 and 1984. The resolution was high and the overall quality good. Dominant color tones were dark green, dark blue and light blue. The following is a brief overview of the imagery and then some of the problems encountered on specific dates.

Forested breaks between semi-permanently, seasonally, and temporarily flooded areas were based primarily upon topography, condition of understory, and amount of foliage. Seasonally flooded forested areas generally have a darker signature than temporary. The semi-permanently flooded forest classification will be used conservatively. The signature is dark and either leafing out hasn't begun, or the leaves have all fallen off indicating a very high stress environment. Forested breaks between temporarily flooded and upland forested areas is often subtle, for there is no dramatic change in dominant vegetation, and both have the same amount of foliage. The soil surveys and topography will be used whenever available.

Seasonally flooded basins generally had water at the time of photography and often give off a strong white signature indicating vegetation. Temporary basins usually had no water at the time of photography and less well defined borders than seasonal.

Sheetwater is present in some of the wetter photography, and is generally labeled non-wetland, except in places where a depression is evident on the topographical map.

Aquatic beds give off two signatures. If the signature is a shiny, uniform pink it is usually duckweed (*Lemna* sp.) and is classified as a vascular floating aquatic bed (AB4). The other signature is a mottled black, and is classified as a vascular rooted aquatic bed (AB3). Examples of this are pondweed (*Potamogeton* sp.) and Creeping Willow Primrose (*Jussiaea repens*).

As noted earlier, Nuphar was the only non-persistent encountered in the field, and this gave off a mottled pink signature easily distinguishable from the smooth, shiny duckweed signature.

Sheetwater was classified as upland except where a depression was present on the topo. The farmed modifier will be used when a wet basin shape area has been tilled.

11-11.81: At the time of this photography the work area was quite dry. The areas checked in the field and classified as temporarily flooded emergent basins give a very subtle signature. In the photography these areas may be no more than a dry depression. If a dry basin appears to have hydrophytes, represented by a white signature, it is a seasonally flooded basin. It is important to note that vegetation will always be assumed in Palustrine basins. This holds true even if no vegetation was observed in the field and none is evident in the photography.

For the forested areas, the temporarily flooded areas are dry in the photography, and the topography and soil survey should be watched closely. Seasonally flooded trees appear wet and have a darker understory. Along the Mississippi River, seasonally flooded forests give off a red signature.

4/23/82: This area was normal to wet at the time of photography. There appears to be some drawdown in the temporarily flooded basins, while standing water remains in the seasonally flooded basins.

Temporarily flooded trees appear red with a darker under story than upland. Seasonally flooded trees are darker and contain fewer red trees. There is good contrast defining the seasonal/temporarily flooded breaks caused by the leafing out in the drier low stress areas.

11/21/83, 11/23/83, 11/24/83: This photography is all very wet. It will be difficult to establish breaks between the seasonally and semipermanently flooded forested areas. Both areas have standing water and little foliage. Again the topography will be very useful.

The temporary basins are holding water in the photography. This will make the temporary/seasonal break difficult. However, there was a correlation established in the field. The lighter signature may be temporary, and the darker signature seasonal. Black or gray basins are semipermanent.

CONCLUSIONS

Over all, photo signatures are consistent with field check sites.

work area, and the field observations are consistently useful in bringing conformity to the different photography. There is a good deal of shadowing in the fall photography which the interpreter should be careful with. Soil surveys and other information should be used whenever available.